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Eighty high school students from economically deprived homes in Los Angeles were trained to tutor third through sixth graders in reading. Selection of tutors was based on low reading achievement scores and teacher recommendation. Twenty middle-income youths also participated, as well as other volunteers. Tutors were trained in four 3-hour sessions using Formula Phonics. Training sessions involved studying learning theory related to reading deficiencies, studying programing techniques using the word attack system, and practicing teaching techniques. Tutors worked in teams of five with five to 10 students. The tutors were heterogeneously grouped according to reading ability; their students were homogeneously grouped. The greatest number of tutoring sessions which any pupil could have attended was 16. Pretesting and post-testing on various forms of the Word Knowledge and Reading sections of the Metropolitan Achievement Test showed an average improvement of 1.0 grades for the students being tutored and a .8 improvement in average reading grade for the tutors. Evaluations of the program are reported from a questionnaire survey of tutors' reactions. A resume of related research and tables are included. (CM)

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Crenshaw Community Youth Study Association

SUMMER CRASH TUTORIAL PROGRAM

1968

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LAWRENCE PUBLISHING COMPANY

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VAIL'S FORMULA PHONICS
TEACHER AND STUDENT EDITIONS

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I. STATEMENT OF THE PROBLEM

Perhaps no problem in the field of contemporary education has stimulated more research in the last two decades than that of developing a methodology in reading instruction which will present faster and better results in learning to read.

Within the framework of existing published materials, a number of fascinating approaches to the expansion of classroom learning have been reported in many of our big cities.

Some elementary pupils in Los Angeles Inner Cith Schools on the basis of a standardized reading achievement test showed reading scores in both word meaning and comprehension as much as two grades below expected grade norms were subjects in a study to test one such system.

In Los Angeles, California, The Crenshaw Community Youth Study Association sponsored a Summer Tutorial Project. The project was federally funded through the Economic Youth Opportunity Association. Technical leadership was supplemented by the Los Angeles City Schools' Office of Urban Affairs.

II. PURPOSE OF PROJECT

A major aim of this project was to prepare 80 high school teenagers from economically deprived homes in the city of Los Angeles to work as tutors with young children in primary grades, three through six, of elementary schools. They were to be supplemented by using 20, middle income youths who would also tutor. The endeavor was planned to improve reading achievement of both the tutors and tutees and to give high school students who had no way of getting meaningful employment something that was valuable by way of service to small children.

Also, it was the purpose of this project to evaluate the effect of a systematic phonetic method approach to the teaching of reading in order: (1) to identify behavorial changes on the part of "tutors" and the "tutees", and (2) to collect research data which could be used to answer questions about.....the components necessary to successful preparation of high school tutors.....the feasibility of utilizing high school students to improve reading deficiencies in young children.

SELECTION OF PARTICIPANTS

Applications for employment were sent by Crenshaw Youth Association to the high schools in the inner city areas. Interested students, who met the qualifications of low family income, completed such applications and were placed on a screening list as tutors. All but twenty applicants were certified for employment as having met the low-income family requirement by the Youth Opportunity Board of the employment center. The use of twenty middle income youths as paid tutors represented a unique aspect of this project. Other tutors, known as volunteers, were students who had been deeply involved as volunteers from Crenshaw Youth Study Association for as many as two years, usually, as coordinators, and were not necessarily from low-income families.

The tutees were selected from five public elementary schools and two Catholic elementary schools. In general, selections were made by teachers and administrators on the basis of low scores on reading achievement tests and teacher recommendations. Intelligence scores were not a major factor. However, it was assumed that pupils recommended for the program would have indices, as measured by group or individual intelligence tests, in the average and above-average potential range.

DESIGN OF PROJECT

Tutor Training -- The design for the Crenshaw Community Youth Study Association and the Los Angeles City Schools' Summer Tutorial projects specified training in Formula Phonics for the N.Y.C. tutors. Thus in the training component of each project there was an allotment of four, three-hour segments of time which were reserved for that instruction. When it was discovered that many of the tutors themselves would be severely retarded in reading, and that SURGE teams would have to be employed, an additional period of time had to be set aside for training in methods of SURGE-team participation.

Why Formula Phonics? -- In the early stages of the projects, when it was thought that the tutoring in reading would be carried on, using the traditional one-to-one tutor to tutee ration, or the more sophisticated and educationally profitable one-to-five ration, it was felt that training tutors in Formula Phonics methodology offered a number of advantages. When it was discovered that SURGE teams, with their five-to-five or five-to-ten tutor-tutee ratio, would be needed, training all tutors in Formula Phonics became an operational necessity.

Essentially Formula Phonics is an uncluttered and therefore uncomplicated method for teaching reading. It employs a highly reliable phonetic word-attack system which permits the "teacher" to devote nearly full time to the development of a pupil's vocabulary while also strengthening his reading comprehension skills. It is a reading system which requires the use of neither basal readers, controlled vocabulary texts, follow-up workbooks, machines, kits, or other specialized materials.

Because the tutors themselves were taught how to teach reading rather than how to use "reading tools", they were able to utilize numbers of unconventional materials to teach reading. Indeed as the projects progressed, certain SURGE teams which, for one reason or another, were unable to get suitable reading texts, were found to be teaching from community newspapers. Other teams wrote and then mimeographed their own stories or copied stories from any material at hand. Los Angeles City Schools' tutors discovered that no special materials were needed to teach tutees of Spanish surname.

Where SURGE groups were in action, it was necessary that each tutor and tutee have a copy of the same materials to read. While tutoring in the one-to-one or one-to-two phase, library books, or even the written material on the back of record albums, served as texts. The Crenshaw tutors, who tutored for a greater period of time during each session than did tutors in Los Angeles, discovered that during the one-to-one segment they could teach reading from a science, math, or a social studies book.

Formula Phonics is of particular value in a tutorial project because it may be used to teach students of any age to read. Thus with no special training the same tutor, or SURGE team, could teach the first-grader initial reading, or could teach remedial reading to subjects of any other grade level. The only criterion for assembling tutee groups, whether for SURGE or one-to-five tutoring, was that all subjects read at approximately the same level. It was not uncommon to find fourth, fifth and sixth-grade tutees in the same group.

Other advantages which accrue to the tutorial project director when Formula Phonics is used are the ease with which large numbers of tutors

may be taught, and the relative lack of expense such training entails. In the Los Angeles project more than 200 tutors were taught to teach reading, using Formula Phonics in four three-hour sessions, at a single site. In the Crenshaw project, the same format was used to teach their more than 100 tutors. A single person trained all tutors for both projects. Since there was no tutor-training manual in print at the time of the training period, all tutors were trained by using a combination of lectures and class participation.

Tutor Training, First Class -- During the first of the four, three-hour sessions, the tutors were shown how typical boys and girls learn to read words when using conventional reading methods. They were next shown why certain pupils, particularly the children of the poor, do not learn to read when using those methods. (During this period, nearly every impoverished reader among the tutors identified the cause or causes of his own reading deficiency.) Tutors were also taught why expending time or energy on the diagnosis of why reading problems developed is usually a total waste of time. This is so because there is really nothing they can do to ameliorate that which caused a reading problem to develop at an earlier time in a tutee's life. All of the tutors were exposed to a discussion of Skinnerian learning theory. This discussion provided an explanation of the reasons why conventional remedial techniques of telling tutees unknown words, or having them skip or guess at such words, cannot possibly teach reading.[1]

The next part of the instructions was of considerable interest to the slower readers among the tutors because it dealt with defense postures

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[1]Edward Vail, "Formula Phonics, an Integrative Approach to Reading, "Psychology, Vol. 4, No. 3 (August, 1967)

in the problem reader. Finally, the tutors were exposed to the concepts of operant conditioning and shown why tutees learn to read faster if they are programmed before a tutor starts to use the reward system, which is the tool of the contigency manager.

Tutor Training, Second Class -- During the course of the second, three-hour instruction period, the tutors learned how to "program" tutees. Here they were shown that English employs a highly reliable system of spelling, and that the sounds or actions of most components used in spelling English words may be taught to a tutee with confidence. This is to say that a spelling component revealed to a tutee during programming will say the same sound or perform the same action in any word which the tutee must read later.

The tutors participated in drills which taught them what and how to program in entire SURGE group of tutees. To protect the tutees, the tutor were taught to input program in such fashion that should they try to program incorrect data into their subjects, the tutees themselves would correct them. (A number of similar defenses were built into the tutor instruction, all intended to protect the tutees.)

Tutor Training, Third Class -- This was the lesson in which the tutors first learned how to teach reading. They first learned how to use a system of internalized rewards to reinforce the learning of the word-attack system they had programmed into the tutees. They learned that to teach reading the tutees had to be led through the mose difficult material they could understand. Hence, they were taught how to teach second, third, and fourth-graders to read in a book at the fourth-grade level of difficulty, and fifth-graders and above (no matter how severe their reading disability), in materials of at lease sixth-grade difficulty.

Most important, these NYC youngsters learned that although a person cannot claim to know how to teach reading unless he can teach word-attack, teaching word-attack by itself is not teaching reading. In lesson three, and again in lesson four, the point was pounded home that only after a tutee had sounded out a word could the reading lesson start. That is, the essence of teaching reading is the ability to develop in the tutee vocabulary and comprehension skills. The tutors learned that these skills are learned in a dialogue which takes place between "teacher" and "student" and occurs after the "student" has sounded out a word.

In the SURGE group, all tutees were engaged in those discussions and, frequently, the tutors as well. Thus it would not be uncommon to find ten tutees and five tutors heatedly discussing the action in a story or the derivation of a word.

Tutor Training, Fourth Class -- The final class carried forward the instruction given in the preceding classes. Particular emphasis was given to the types of lessons to be found in fourth and sixth-grade materials. Tutors were also taught how to use spelling as a tool for positive reinforcement of the word-attack system and how to play "games" which served the same purpose.

With the completion of this lesson, the college tutors, other adults, and the volunteers, who were to tutor on a one-to-one or one-to-five ratio, had received all of the instruction they needed to teach reading. However, anyone who was to serve on a SURGE team, or manage a tutorial site, received the following additional instruction.

Tutor Training, SURGE Team -- In the final segment of instruction tutors were shown how to function when teaching in a SURGE team. Here there was a general discussion involving only tutors. Tutors then formed

into small groups which included all the personnel who were to serve at a single tutoring site. At this time the tutors were assembled into their SURGE teams and the moderators were introduced. The role of the moderator was explained and the structure for teaching within the SURGE team was demonstrated. The moderators then assigned team members their responsibilities to be performed during the three lessons when the tutees were programmed. In the time which remained, the members of each SURGE team engaged in role playing, with adults playing the parts of problem readers. Ideally, each team member taught a short lesson, and then criticized each of the other team members as they taught a similar lesson. Finally, there was a discussion as to which type of follow-up activities would be utilized during the one-to-one or one-to-two tutoring which followed the group experience.

RATIONALE

It seems appropriate that the rationale which governed the need to employ SURGE groups in the Crenshaw and Los Angeles City Schools summer tutorial projects be presented. The proposals which these organizations had made to the E.Y.O.A. suggested that eighty poverty- level youth, augmented with twenty middle income youth and with volunteers, would constitute the tutorial force; that they would teach reading, using the Formula Phonics method; and that an educational outcome was expected for both tutors and tutees. With the issuance of the contract, the lead time for recruiting the paid tutors was so short that no academic screening was possible. As recruitment went forward, it was discovered that numbers of the poverty-level tutors who were to teach reading were themselves impoverished readers.

It had been shown in two earlier studies--one involving a small number of youngsters from a tutorial group in the San Fernando Valley; the second involving the training of some 100 tutors for the Crenshaw Community Youth Study Association--that high school-age tutors could be taught to be successful remedial reading teachers when taught the Formula Phonics method. However, in these two pilot studies, the tutors had all been volunteers who appeared to be highly motivated and were usually fine readers. Now the problem arose as to how to provide a structure wherein tutors, many of whom were reading at the third or fourth-grade level, could be taught to be remedial reading teachers and, at the saem time, learn to read themselves. The problem was further complicated by the fact that the programs provided for fewer than eighteen tutoring sessions where tutor and tutee would interfaced.

If the terms of the contract were to be met by the organization in those few sessions, both tutors and tutees were to improve in reading. It was obvious that in the traditional one-to-one setting an eleventh-grade tutor who might be reading at the fourth-grade level would profit little from his tutoring experience; his tutee, not at all. The contract, however, demanded that for each there be an educational outcome. Those at Crenshaw and in Los Angeles were equally insistent that the old evaluation saw, "Both tutors and tutees improved their self image," hardly constituted an educational outcome.

Earlier training experiences had shown that a well-read high school-age tutor who was familiar with the Formula Phonics method could easily teach a group of four or five problem readers. Indeed, during the training for the pilot sessions, all tutors had been warned against teaching remedial reading on a one-to-one ratio. There were three major reasons for this prohibition:

1. Over a period of time, one-to-one tutoring can become deadly dull.

2. A one-to-one ratio allows no change for an intellectual exchange which constitutes anything beyond that which tutor and tutee bring to the situation.

3. Formula Phonics is designed to teach groups.

Because the contract for the project under review called for a one-to-one ratio and required the utilization of sub-standard readers as tutors, the SURGE (Students' Upgraded Reading Group Experience) Team was designed. Essentially, a SURGE group constitutes a five-to-five tutor-tutee ratio, where the tutors are heterogeneously grouped according to reading ability, while the tutees are homogeneously grouped.*

*Rather than turn tutees away, many SURGE teams voluntarily accepted five extra tutees and taught in a five-to-ten situation.

Hence, it was conceived that a typical SURGE team might contain tutors reading at the thirteenth, ninth, sixth, fourth, and third-grade level. (The use of middle income tutors allowed for at least on strong reader on SURGE team). However, provision was made in each project for each tutor to meet with his tutee(s) in a one-to-one situation during part of each session.

Shortcomings

The major difficulties with the SURGE team plan occured where:

1. Tutees were of too disparate reading ability. Just as in a classroom, a spread of more than a year and a half in reading ability among tutees caused problems of boredom or discipline. The problem was not observed where homogeneous grouping was the mode.

2. Tutees were allowed to enter the program after the third lesson. If a site director or SURGE team leader wishes to add a tutee to a SURGE group after "programming" of the tutees is completed, he must:
   a. Assure himself that the tutee is of the same ability level as the other tutees; and
   b. "Program" the tutee himself before assigning him to the SURGE group.

3. Tutors varied widely in reading ability. Because they did not understand that an expected outcome of the program was the improvement of certain problem readers in each SURGE team, the better readers in some teams were most intolerant of the shortcomings of the poorer readers. These better readers were usually not perceptive enough to recognize that some of the poorer readers, whom they characterized as "not having done their homework," were actually sounding out words along with a tutee. Where tutors were of near equal ability (strong readers or weak readers all) this problem did not occur.

Strengths

It is felt that the SURGE team, coupled with instruction in the Formula Phonics method offers the following advantages to the tutorial program which must rely on less than adequate readers as tutors.

1. Training -- Tutors can be instructed in how to teach Formula Phonics in four three-hour sessions and in how to work in SURGE teams in an additional three to six hours. Large numbers of tutors may be trained in a single location. (In the Crenshaw project more than

100 tutors were trained at once, and in Los Angeles, more than 200.

2. Redundancy -- Where a certain tutor may not have understood all of the instruction, or did not pay attention, his inadequacies or poor teaching will not "hurt" the tutees since he is always "backed up" by the remaining tutors.

3. Absenteeism -- The absent tutor has always plagued tutorial projects. Where there are SURGE teams or where Formula Phonics is being used, the absence of a tutor does not leave a tutee on his own. Once under way, any tutor can handle with complete ease, the tutee of any other tutor.

4. Expense -- Tutorial projects using Formula Phonics are extremely inexpensive. The only expenses, excluding recruiting, supervising, and the like, would include the cost of a trainer and three sets of the six-page "Pal" sheets for each tutor. No textbooks, such as basal readers, or supplies, such as kits or machines are needed by the tutors. Some of the SURGE groups taught remedial reading, using stories they had written, typed, and mimeographed; others used community newspapers as "texts."

5. Integration -- The SURGE groups offered the possibility for both racial and social-class integration.

6. Growth Potential -- As tutors become adept in teaching Formula Phonics it is possible to remove them from their SURGE team and permit them to tutor in a one-to-five situation. A new tutor may then be added to the team where he may develop as a reader and also learn how to teach remedial reading.

Expected Outcomes

Because both tutors and tutees were subject to a controlled learning experience (in the classical Skinnerian "learning theory" sense), it is expected that growth in both word attack skills and ability to read (vocabulary building and comprehension) will continue to grow in each independent of further instruction. That is to say that, confronted with a problem of either the word-attack or reading variety, the tutor or tutee will have to fall back on the system which provided so many "rewards" during his time in the SURGE group. Thus, each time he must read and utilize anything he learned as part of a SURGE group, he is providing self-reinforcement of a reading skill.

HYPOTHESIS

In undertaking responsibility for the training segment of the Crenshaw community youth Study Associations's Summer Tutorial Program and of the Los Angeles City Schools, Office of Urban Affairs S.T.E.P. Program, Edward Vail stated the following hypotheses:

1) That because numbers of the Neighborhood Youth Corps tutors would themselves be problem readers, little educational outcome could be expected if they were trained in conventional reading methods, or if they tutored on a one-to-one basis.

2) That in tutoring in a five-to-five situation, (SURGE Group), an educational outcome could be expected for both tutors and tutees.

3) That in four, three-hour sessions, both volunteers and paid Neighborhood Youth Corps tutors could be trained in the Formula Phonics method.

4) That numbers in excess of 150 such pupils could be taught the method during the four training sessions.

Project hypotheses were accepted at the .05 level of confidence according to the following variables: tutors' and tutees' scores on standardized reading tests. Tutors' responses on open-ended questionnaire of program effectiveness are also included. The following instruments were used to collect information on the variables:

1. Forms 2A and 2B (Reading Comprehension) of the Co-operative English Tests were used to assess raw scores for tutors before and after tutoring sessions using the Formula Phonics Method.

2. Forms Am and Bm (both Vocabulary and Comprehension Intermediate Battery) of the Metropolitan Achievement Tests were used for tutees to establish grade equivalents before and after instruction using the Formula Phonics Method.

3. An open-ended questionnaire was used for gauging tutors' reactions to the program.

OPEN-ENDED QUESTIONNAIRE

Part of the process of evaluation involved obtaining feedback information on how well the features of the plan were implemented and on difficulties that were encountered. Such information obtained from teachers' (tutors) reports or from observations of the program in action, helped the program director judge whether any shortcomings in the program to improve learning outcomes were due to faults in the program design or to faults in its execution.

Seventy-six tutors completed an open-ended questionnaire shown earlier in the outline form they used to facilitate answering, designed by the researcher. The questionnaire requested the respondents to express themselves freely in answering the following questions:

1. What are some personal feelings you have about teaching in front of other tutors?
2. What abilities do you feel that you bring to your SURGE team?
3. To what extent will constructive criticism from your SURGE group affect your performance?
4. State what you think is the function of the adult coordinator at your tutoring location?
5. How do you operate the daily schedule?
6. How do you adjust daily plans as new situations arise?
7. What do you feel are some responsibilities that should be shared by the entire team?
8. What individual responsibilities do you assume?
9. How could you adequately communicate with each other, the tutees, and parents?
10. What are some rewarding experiences for both tutor and tutees?
11. What changes in the tutoring program would you suggest?

An extensive evaluation of the full impact of the project is not attempted here and now. However, through personal judgment of individual reactions to the open-ended questionnaire, it was possible to gain some indications of the influence the experiences had on the tutors. It would be incorrect to infer that all the participants either revealed through their behavior or expressed in written summaries similar reactions to the project, but the following general reactions were typical of feelings expressed by a majority of the high school tutors on the open-ended questionnaire.

"The SURGE group was great. Absolutely must continue this form."

"I find that teaching the kids to read is difficult. Working with other tutors gives me better ideas with details."

"I think our SURGE group was very original. Some people copies our ideas."

"SURGE group is an extremely great idea which greatly keeps the interest of tutors."

"I don't think you can put a label or measure our learning, but I do think that one can say we all benefited from the program."

"I think any ability to work with other tutors in a group is really great because we could learn from each other."

"The program was a wonderful experience for all involved. It made me learn a little more about myself. Aside from learning about myself, I learned about children. They do want to learn but sometimes they have to be pushed."

"My feelings of my SURGE group couldn't be more sincere. Both the tutors and tutees were cooperative and fun to work with. We all taught each other, and developed relationships that will benefit us for the rest of our lives."

"My feelings toward the SURGE groups are hard to explain. I think this is a wonderful experience I will never forget."

"What you learn from this program is worth much more than any amount of money. The relationships you develop between the SURGE groups and tutors are of great importance."

"I was happy with the idea of a SURGE group. These many tutors just brought about many more ideas to help the kids. The tutees also wouldn't be stuck with the same teacher the whole day long."

"In our group we got as much from the program as our tutees did."

"The SURGE group was more successful than individual tutoring."

On the other hand, some students felt that one-to-one tutoring was best for the tutee. "It is hard on tutees to have so many tutors. Time is wasted in SURGE group. I could get along faster with my tutees and they would not get so bored."

"My SURGE group was concerned and well organized, but I think--approach was confusing to the tutee."

"We found the SURGE group tutoring method confusing for the tutee. One tutor would be in the process of teaching and right in the middle of everything his time would be up and this broke the attention for the tutor to have to stop and another one take over. The tutee would become very distracted too."

Most of the tutors planned a daily program and made adjustments or changes only when there was a need. There was evidence of continuous evaluation. Strengths and weaknesses of implementing the program were discussed daily either before or after tutoring sessions.

Many exhibited a level of confidence and a view of self that was not present before. One tutor stated:

"Teaching in front of other tutors was somewhat frightening to me at first. I am not as shy as I was when I started with the SURGE group. I have changed considerably."

Changes in skills and attitudes of tutees participating in the project were carefully observed and assessed by the tutors.

One tutor indicated that at the beginning of the program the tutee could not figure out the word. He would become real mad but as the program progressed the tutee knew more rules and used them while

trying to sound a word. Another observed that her tutee learned to read more smoothly and could pronounce or sound out each unknown word she came upon in her reading. Many tutors described noticeable changes in their tutees as the program reached the closing date. One tutor stated:

> "I felt that they (tutees) showed, in general, a greater interest in reading and were participating more than at the beginning of the program."

Changes which might improve the program suggested by most of the tutors include:

. . . . A longer orientation or planning workship.

. . . . Diagnostic testing period specified with beginning and closing date.

. . . . More enthusiasm within the tutor. Competent tutors, chosen with more care.

. . . . Longer duration of instruction for tutee.

. . . . Observation periods for visitors clearly defined and understood by tutee and observer.

. . . . Reading abilities of tutors included in criteria for selection.

. . . . Better tutor-parent communication. Clearly defined role of adult coordinator of SURGE groups.

. . . . Continuation of the program.

Below is a brief example of the kinds of suggestions expressed by the tutors to improve the Summer Tutoring Program in relation to the broad areas identified above.

> "Tutors should be tested more thoroughly. Many tutors are not putting out their very best efforts. Also some tutors are not familiar with materials they were taught."

> "Several tutors did not give themselves whole-heartedly to the cause Often when called upon to teach they did not know their material and often misled the tutee and thereby ruined the learning situation. This brings me to the qualifications of some tutors to teach."

"On the first application, it asked what your grade-point average is. Right below the question it plainly states that your scholastic standing will not be used to discriminate against you. I find this statement appalling. I think that only students with average to high-average should be the only ones to tutor."

"More time should be given to teach. Just when the tutee is beginning to show an interest and gain confidence, the program closes. The tutoring should begin the last week of June and continue to September."

"I think this reading program would be more successful if parents attended a couple of the tutoring meetings and found out what we are doing."

"I think we should have a half-day to just get to know the parents. I think the majority of the parents really didn't know what we were doing."

"I think if we had more parent cooperation it would help more. They would understand how important this program is. Also, they would influence their children to cooperate fully in the program."

One tutor changed his attitude toward parent desire for education of their children. She attributed a parent-teacher relationship as the greatest influencing factor for the change.

"I was very pleased to meet one of my tutee's parents. The parent was very pleased with the program and happy that her son was given aid. She made us all feel very proud. I was very pleased to find out that the parents of the children really, cared about their children's education, and were willing to help out. When I first started tutoring, and often I met some of the kids, I felt some of the parents were just trying to get rid of some of the rascals. I was so glad to find out that I was wrong."

The role of the adult coordinator was not always understood by the tutees. Two tutees suggested what they felt the role should be.

"I think the function of the adult in the program should be to supervise the program and help with any problems that arise; also, to organize and control the various activities."

"In my opinion the adult should be there just to see to it that everything runs smoothly. I don't think that he should be allowed to come into the room and criticize or even try to tell us how we should be teaching. We are the ones who should be really running the show."

A majority of the tutors felt that visitors and observers disrupted the learning situation for the tutee.

> "I feel that all visitors should be told not to interrupt the tutor when they enter a learning situation."

SCORES OF TUTEES

All subjects were pre-tested using the Word Knowledge and Reading Sections of The Metropolitan Achievement Test, Intermediate Battery, Form Bm, and post-tested using the Am form of the same instrument. Pre-tests were administered during the week of July 8, 1968, and the post-tests were administered during the week of August 26, 1968. The greatest number of tutoring sessions which any tutee could have attended was 16. Formal reading instruction (SURGE Group) lasted approximately one hour each session.

Approximately 100 tutees took part in the program. Of this number, there were valid pre-and post-tests for thirty-four. The research design for this project called for a study of all tutees. This was not possible because of two problems. These were:

1. A number of tutees served were found to be first and second, or seventh graders. No copies of the primary and advanced tests were available to test these youngsters.
2. A number of tutees were either not pre-tested or post-tested. While the number of tutees who were not tested initially was quite small, a sizable number of tutees did not attend the final session because of a tense situation which existed around certain of the tutorial sites.

The scores presented below represent the effort of every third, fourth, fifth and sixth grade tutee for which there is a pre-and post-test.

TABLE I

TUTEES - GRADE 3

	Pre-Test		Post-Test		Difference	
Sex	R.G.P.*	Raw Score	R.G.P.	Raw Score	R.G.P.	Raw Score
M	1.7	8	3.0	14	1.3	6
M	1.9	9	3.0	14	1.1	5
M	3.1	14	3.7	26	0.6	12
M	3.6	25	3.6	25	0.0	0
F	1.5	7	2.0	11	0.5	4
F	2.0	11	3.7	26	1.7	15
F	3.0	14	3.9	28	0.9	14
N = 7	2.2		3.3		1.1	

TABLE II

TUTEES - GRADE 4

	Pre-Test		Post-Test		Difference	
Sex	R.G.P.	Raw Score	R.G.P.	Raw Score	R.G.P.	Raw Score
M	0.0	2	3.2	15	3.0	13
M	1.6	7	3.4	22	1.8	15
M	2.5	12	3.1	14	0.6	2
M	3.1	14	4.4	34	1.3	20
M	3.5	23	3.6	25	0.1	2
F	0.0	3	1.5	7	1.5	4
F	3.1	14	4.4	34	1.3	20
F	3.5	23	3.6	25	0.1	2
F	3.5	23	3.6	25	0.1	2
N = 9	2.2		3.9		1.7	

* Reading Grade Placement

TABLE III

TUTEES - GRADE 5

	Pre-Test		Post-Test		Difference	
Sex	R.G.P.	Raw Score	R.G.P.	Raw Score	R.G.P.	Raw Score
M	2.0	11	3.5	23	1.5	12
M	3.3	20	3.8	27	0.5	7
M	3.3	20	3.8	27	0.5	7
M	3.5	23	3.4	22	-0.1	-1
F	1.5	7	2.0	11	0.5	4
F	2.0	11	2.0	11	0.0	0
F	2.0	11	3.4	22	1.4	11
F	3.5	23	4.8	40	1.3	17
F	3.6	25	3.1	14	-0.5	-11
F	3.6	25	3.8	27	0.2	2
F	3.9	28	3.5	23	-0.4	-5
F	4.7	44	5.9	50	1.2	6
N = 1	3.1		3.7		0.6	

TABLE IV

TUTEES - GRADE 6

	Pre-Test		Post-Test		Difference	
Sex	R.G.P.	Raw Score	R.G.P.	Raw Score	R.G.P.	Raw Score
M	3.0	14	4.0	29	1.0	15
M	3.8	27	5.1	44	1.3	17
M	5.4	45	5.6	46	0.2	1
F	1.7	8	1.7	8	0.0	0
F	4.5	35	4.9	42	0.4	7
F	4.6	36	5.0	43	0.4	7
N = 6	3.8		4.2		0.4	

SCORES OF TUTORS

In the establishment of the SURGE teams, it was necessary to have some gauge of each tutor's reading ability. There was also a need to determine whether tutors had improved in reading as a result of their experience in a SURGE group. The Cooperative English Test, Forms 2a and 2b, Reading and Comprehension Section, were used to pre-and post-test the tutors. Tutors were pre-tested on July 1, 1968 and post-tested on August 29, 1968.

It will be seen that a considerably larger sample of tutors were tested than were tutees. This was probably because tutors were paid for their attendance at all training and testing sessions. Many of the 20 middle income tutors who had learned the method in February, 1968 did not take part in the July training or in the testing program.

Scores of individual tutors were not converted to reading grade placements because it was not necessary for a statistical treatment of the data. Neither were such scores necessary to determine placement in one or another of the SURGE teams. It was the assumption of the project directors that a tutor who scored 95 points out of test's 120 was probably a better reader than a tutor who scored 43 points.

TABLE V

TUTORS - GRADE 9

N = 6	Pre-Test	Post-Test	Difference
Sex	Raw Score	Raw Score	Raw Score
M	91	108	17
M	108	111	3
F	0	20	20
F	41	47	6
F	50	48	-2
F	89	88	-1
Mean	63.1	72	8.9
Mean R.G.P.	7.3	8.2	0.9

TABLE VI

TUTORS - GRADE 10

N = 13	Pre-Test	Post-Test	Difference
Sex	Raw Score	Raw Score	Raw Score
M	60	60	0
F	27	36	9
F	41	45	4
F	42	50	8
F	42	51	9
F	47	69	22
F	49	60	11
F	54	55	1
F	55	68	13
F	62	72	10
F	66	80	14
F	71	74	3
F	72	75	3
Mean	52.8	61.2	8.4
Mean R.G.P.	6.3	7.1	0.8

TABLE VII

TUTORS - GRADE 11

N = 24	Pre-Test	Post-Test	Difference
Sex	Raw Score	Raw Score	Raw Score
M	23	28	5
M	41	63	22
M	56	72	16
M	58	61	3
M	66	67	1
M	80	88	8
F	27	39	12
F	32	31	-1
F	45	44	-1
F	46	50	4
F	47	64	17
F	50	43	-7
F	56	59	3
F	59	66	7
F	60	52	-8
F	62	68	6
F	64	67	3
F	64	69	5
F	64	82	18
F	66	67	1
F	71	79	8
F	76	74	-2
F	79	87	8
F	89	85	-4
Mean	55.3	61.2	5.9
Mean R.G.P.	6.5	7.1	0.6

TABLE VIII

TUTORS - GRADE 12

N = 18	Pre-Test	Post-Test	Difference
Sex	Raw Score	Raw Score	Raw Score
M	61	69	7
M	69	68	-1
M	78	84	6
M	95	102	7
M	103	108	5
F	35	37	2
F	53	65	12
F	55	69	13
F	55	56	1
F	56	62	6
F	56	67	11
F	58	70	12
F	58	70	12
F	62	72	10
F	69	81	12
F	76	74	-2
F	92	91	-1
Mean	64.4	72.8	8.4
Mean R.G.P.	7.6	8.2	0.6

*R.G.P. - Reading Grade Placement

It is doubtful as to whether a search of the literature would disclose like results for any tutorial project where teaching tutees to read English is the goal. This, however, is the only tutorial where tutors used Formula Phonics and where tutees had been pre-and post-tested. Since the Crenshaw Tutorial was as much a test of the Formula Phonics Reading Method as it was a test of the concept of youth tutoring youth, material is presented which might allow the reader to divorce the method from the tutors. A study is presented at the close of this evaluation where classroom teachers used the Formula Phonics Reading Method to teach children in a similar period of time. In studying these data (as compared to the data which relate to the tutees in this study) nearly parallel results are discovered. Hence, if the expertise of the teachers and of the tutors is ruled out in these two studies, the method remains to account for the improvement noted in the pupils.

In summary, it will be seen that tutees improved as follows:

Grade	Test 1	Test 2	Improvement
3	2.2	3.3	1.1
4	2.2	3.9	1.7
5	3.1	3.7	0.6
6	3.8	4.2	0.4
All Grades	2.8	3.8	1.0

while for tutors, the following:

Grade	Test 1	Test 2	Improvement
9	7.3	8.2	0.9
10	6.3	7.1	0.8
11	6.5	7.1	0.6
12	7.6	8.2	0.6
All Grades	6.9	7.7	0.8

The following tables offer statistical verification of the above.

Table I. Analysis of Variance of Grade Placement Scores by Elementary School Tutees.

Source of Variation	Sum Of Squares	d.f.	Mean Squares	F
Treatments	9.57	1	9.57	16.30
Blocks	66.30	33	2.01	
Residual	19.36	33	.587	
Total	95.23	67		

Significance: .01 level

The Analysis of Variance for grade placement scores of tutees is shown in Table I. We find this F ratio to be significant at the .01 level of confidence. That is to say, that differences between the pre test and post test grade placement scores on reading tests this large, would probably occur fewer than one time in a hundred by chance or by sampling error.

TABLE II. Analysis of Variance of Raw Scores of Elementary School Tutees.

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Treatments	791.53	1	791.53	28.6
Blocks	7322.12	33	221.88	
Residual	923.47	33	27.98	
Total	9037.12	67		

Significance: .01 level

Table II shows the Analysis of Variance of tutees by raw scores. We find this F-ratio is significant at the .01 level. Therefore the probability that differences this large in the mean between the pre tutoring reading test and the post tutoring would occur by chance less than one time in a hundred.

Table III. Analysis of Variance of Raw Scores of High School Tutors.

Source of Variation	Sum of Squares	d.f.	Mean Square	F
Treatments	9678	1	9678	77.99
Blocks	30737	61	503.88	
Residual	7578	61	124.23	
Total	47993	123		

Significance: .01 level

The Analysis of Variance for raw scores of tutors is shown in Table III. We have F = 77.99 is significant with probability less than .01. Thus we consider that the means are significantly different. for the pre-tutoring reading test and the post-tutoring reading test.

RECOMMENDATIONS

Based on this evaluation, the following recommendations are submitted:

1. A project of this type be funded on a year-round basis.

2. A pilot project where Formula Phonics is used in a community involvement reading program be established in certain elementary schools.

3. Information derived from this project be made available to all projects where youth tutors youth.

RESUME OF RELATED RESEARCH

Exhibit A: Research Study Using Formula Phonics Reading Method during summer of 1967.

Exhibit B: Suggested Outline to Evaluate the Summer Tutorial Program Condensed from an Open-end Questionnaire.

These data represent the effects on reading scores of 112 subjects who were exposed to 18 hours of instruction with the Formula Phonics Reading Method in the summer of 1967. All subjects were taught in a regular classroom, in groups of from 10 to 12. During the period of instruction, three different teachers worked with each group. Subjects attended class for three 50-minute periods weekly, over a six-week period. Subjects were pre-and post-tested, using the reading section of the Wide-Range Achievement Test.

Subjects were grouped according to reading problem, and grade spread as much as four years within a group was not uncommon. Of the 18 hours expended on each group:

1) 31/2 hours were spent on "input programming";

2) 91/2 hours were spent on oral reading and reading games, where vocabulary building and comprehension skills were stressed;

3) 2 hours were spent on spelling; and

4) 1 hour was spent on final testing.

During the final 13 1/2 hours of instruction, the word-attack elements which had been introduced during the "input programming" were reinforced.

Sociologically, subjects were essentially from upper-lower and middle-income homes. Three of the subjects were Negroes; eight were Spanish Surnamed; and the remainder were "Other White." Of the group, 33 were girls and 79 were boys.

These data were derived, using raw scores achieved by subjects on the Wide-Range Achievement Test where:

VAR. --Variable factors (here, 1)

MEAN --Mean raw score on pre-and post-tests

S.E. --Standard error of the mean scores

N. --Number of subjects

S.D. --Standard Deviation

ITEM. --Should read "item"

SUM. DIFF. --A number used in the calculation of t ratio

CORREL. --Shows relationship between pre-and post-test scores.

D.F. --Degrees of Freedom--used in calculating the t ratio

t RATIO --Value of the results of the calculations for the t ratio. Tests the significance of the difference of the mean scores.

SIGNIF. --These data reflect the significance of a comparison of the mean scores. Thus, .01 shows a degree of confidence in the data where 99 times out of 100 the results achieved were not due to chance.

STATISTICS FOR VAIL READING DATA GRADE 2

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	34.200	1.806	10.	5.712	41.000	2.761	10.	8.731

T-TESTS FOR VAIL READING DATA GRADE 2

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	68.000	0.898	10.	4.896	AT .01

STATISTICS FOR VAIL READING DATA GRADE 3

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.D.	N.	S.D.
1	41.000	1.330	20.	5.947	45.100	1.638	20	7.326

T-TESTS FOR VAIL READING DATA GRADE 3

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	82.000	0.872	20.	5.077	AT .01

STATISTICS FOR VAIL READING DATA GRADE 4

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	51.826	1.189	23.	5.702	57.348	1.502	23.	7.202

T-TESTS FOR VAIL READING DATA GRADE 4

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	127.000	0.931	23.	9.423	AT .01

STATISTICS FOR VAIL READING DATA GRADE 5

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	53.263	1.475	19.	6.428	58.368	1.831	19.	7.981

T-TESTS FOR VAIL READING DATA GRADE 5

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	97.000	0.382	19.	5.835	AT .01

STATISTICS FOR VAIL READING DATA GRADE 6

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	54.286	1.960	14.	7.332	60.214	2.299	14.	8.604

T-TESTS FOR VAIL READING DATA GRADE 6

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	83.000	0.943	14.	7.461	AT .01

STATISTICS FOR VAIL READING DATA GRADE 7

	PRE TEST SCORES				POST TEST SCORES			
VAR.	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	54.188	3.454	16.	13.814	61.250	3.527	16.	14.107

T-TESTS FOR VAIL READING DATA GRADE 7

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	113.000	0.975	16.	8.965	AT .01

STATISTICS FOR VAIL READING DATA GRADE 8

	PRE TEST SCORES				POST TEST SCORES			
VAR	MEAN	S.E.	N.	S.D.	MEAN	S.E.	N.	S.D.
1	36.000	14.00	2.	19.799	46.000	12.000	2.	16.971

T-TESTS FOR VAIL READING DATA GRADE 8

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	20.000	1.000	2.	5.000	

STATISTICS FOR VAIL READING DATA GRADE 9

VAR	PRE TEST SCORES MEAN	S.E.	N.	S.D.	POST TEST SCORES MEAN	S.E.	N.	S.D.
1	39.250	3.660	4.	7.320	49.500	4.94.	4.	9.883

T-TEST FOR VAIL READING DATA GRADE 9

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	41.000	0.970	4.	6.205	AT .01

STATISTICS FOR VAIL READING DATA GRADES 10-12

VAR	PRE TEST SCORES MEAN	S.E.	N.	S.D.	POST TEST SCORES MEAN	S.E.	N.	S.D.
1	43.250	7.099	4.	14.198	50.750	8.587	4.	17.173

T-TEST FOR VAIL READING DATA GRADES 10-12

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	30.000	0.978	4.	3.382	AT.05

STATISTICS FOR VAIL READING DATA GRADES 2-7

VAR	PRE TEST SCORES MEAN	S.E.	N.	S.D.	POST TEST SCORES MEAN	S.E.	N.	S.D.
1	48.951	1.024	102.	10.344	54.539	1.131	102.	11.427

T-TEST FOR VAIL READING DATA GRADES 2-7

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIF.
1	570.000	0.954	102.	16.234	AT .01

STATISTICS FOR VAIL READING DATA GRADES 8-12

VAR	PRE TEST SCORES MEAN	S.E.	N.	S.D.	POST TEST SCORES MEAN	S.E.	N.	S.D.
1	40.200	3.702	10.	11.708	49.300	4.077	10.	12.893

T-TEST FOR VAIL READING DATA GRADES 8-12

ITEM	SUM DIFF	CORREL	D.F.	T TEST	SIGNIG.
1	91.000	0.962	10.	7.985	AT .01

A SUMMARY OF DERIVED SCORES FOR EACH GRADE LEVEL IS PRESENTED BELOW:

Number	Pre-Test	Post-Test	Difference
	Grade 2		
10	1.7	2.3	0.5*
	Grade 3		
20	2.2	2.6	0.4
	Grade 4		
23	3.3	4.0	0.8
	Grade 5		
19	3.4	4.2	0.8
	Grade 6		
14	3.6	4.5	0.9
	Grade 7		
16	4.4	5.8	1.2
	Grade 8		
2	5.3	7.8	2.5
	Grade 9		
4	6.3	8.4	2.1
	Grades 10-11-12		
4	7.2	9.1	2.0
	All Elementary Grades 2-6		
86			0.7
	All Jr. High Grades 7-9		
22			1.7
	All High School Grades 10-12		
4			2.0
	All Subjects-Grades 2-12		
112			0.9

*Scores rounded off to nearest whole month of grade placement

Crenshaw Community Tutorial & Training Project
3800 Sutro Avenue
Los Angeles, California 90008

July 25, 1968

TO: Tutors
Adult Coordinators

FROM: Lovelia P. Flournoy
Chairman, Evaluation

SUBJECT: Evaluating the Crenshaw Community Tutorial & Training Project, Summer 1968, Sponsored by EYOA, Los Angeles City Schools, Office of Urban Affairs and Crenshaw Community Youth Study Association

To effectively evaluate the Summer Tutorial Program, we need objective data collected from observations of pupils at work, test results, anecdotal records, and evaluations by the tutor. Please plan to observe, record, and summarize findings. A suggested outline has been developed to help you organize your data collected from observations and instructional evaluations. The moderator will collect descriptions and give them to a representative of the Research Team.

Summer
1968

CRENSHAW COMMUNITY TUTORIAL & TRAINING PROJECT

Sponsored by Los Angeles City Schools
Crenshaw Community Youth Study Association
Economic and Youth Opportunities Agency

SUGGESTED OUTLINE TO EVALUATE THE SUMMER TUTORIAL PROGRAM

I. The SURGE Group--Personal Feelings

A. Plan for your tutoring day.

B. Feelings about teaching in front of other tutors.

C. Feelings about "constructive criticism" from other tutors.

D. Judge your ability to work with the other tutors in a group.

E. State what you think is the function of the adult in the program and if your adult performed this function.

II. Daily Program

A. Schedule to get going each day.

B. Person in SURGE group who was in charge each day.

C. Things done at given time of day, say 1:30 p.m. to 3:30 p.m.

1. Rigid procedure followed, or flexibility according to problems which occurred.

2. If flexible, give example.

III. Sharing of Responsibility

A. Person assigned to do what and when.

B. Things the group does together.

C. Things handled by one person.

IV. Communication within the SURGE Group

A. Planning tutorial sessions (when, where, what).

B. Method in which work sessions handled (before tutoring session, during break, or after tutoring session).

V. Communication--Tutor to Tutee

A. Likes and dislikes of tutee concerning the program.

B. Your observations of changes in skills and attitudes of tutee. Record key expressions, tutor-made test results, and responses of tutees.

VI. Parent Communication

A. Outcome of any conferences you may have had with a parent.

B. Parents' responses to program.

VII. Continuous Evaluations

A. Changes made in your planning, procedures, and grouping of tutees.

B. Ways in which tutor helped his tutee identify his strengths and weaknesses.

C. Changes made in program after finding out strengths and weaknesses of tutees.

VIII. Rewards for Tutors and Tutees

A. Experiences which made your tutoring program successful. Record certain responses from tutee who reached success because of these experiences.

B. Feelings concerning SURGE Groups.

IX. Changes which might improve tutoring program.